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Financial Preparedness for Retirement

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Preliminary Draft

Abstract

There exist three major alternative ways to secure the financial needs in retirement: family support, social security, and own preparedness. Own preparedness has become increasingly important while family support mechanism and social security systems may fail. Using a survey conducted Aging Research Team of National Science Council, this paper firstly explore factors influencing individual's financial preparedness decision. Our estimates suggest people who are male, less educated, with least incomes and unsatisfactory economic conditions are less likely to prepare financially for retirement. Furthermore, we secondly examine influential factors that underlie an individual's subjective preferences on alternative ways of assuring the financial security in retirement. Our estimates suggest that individuals, who have non-wage incomes and who are satisfied with their economic and health conditions, are more likely to consider the own preparedness as their best ways to maintain the financial security in retirement. In contrast, current retirees are less likely to consider own past preparedness as their best ways. Moreover, individuals who are less educated or are constantly assisted on regular expenses are more likely to consider family support as their best ways to secure financial needs in retirement.

Keywords: Financial Security in Retirement; Own preparedness; Family support

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1. Introduction

In general, there exist three major alternative ways for individuals to secure the financial needs in retirement: intra-family support, social security, and own preparedness. The first two alternatives are relying on others, while the last one is relying on themselves. In case the former two alternative ways do not function well, own preparedness becomes increasingly important. People would need to work more, save more, and invest more while younger.

In rural and agricultural areas of developing societies, Intra-family support mechanism traditionally serves as the insurance against insufficient retirement income. The mechanism by which the young supports for old is usually through shared living arrangements. Elderly in these types of societies are often excluded from social security systems. Moreover, due to the incapability of accumulating more wealth, they mainly rely on working children's financial supports in retirement. However, urbanization, family structure change, and erosion of filial piety have placed traditional family support mechanism under increasing pressures. In other words, the family support mechanism may fail.

In many industrialized societies, social security system has well covered most of people and therefore intra-family support plays little role in securing retirement's financial needs. A potential problem in these societies is that people are lack of incentives to prepare financial futures on their own. Workers in countries with well established social security systems are somewhat or very confident that they will have sufficient income to live comfortably in retirement. Therefore, a lot of them are reaching retirement age unprepared for more long-term financial needs in retirement. As a matter of fact, one of major issues in developed countries such as USA is that many pre-retirees are financially unprepared for their retirement (Malroux and Xiao, 1995). Insufficient pre-retirement planning practices for financial futures have been identified as a major economic problem in a number of developed countries (Singleton & Keddy, 1991; Hershey and Mowen, 2000). The problem of inadequate pre-retirement financial planning will continue to worsen in the coming decades because of both higher longevity and early retirement trends. However, in these developed countries, the awareness of the need to make concrete financial preparation for retirement has increased with greater information available to the public (Anderson et al., 2000). People in the aging society gradually learn the information regarding a potential bankruptcy of social security, so they have to find other ways to achieve the financial adequacy in retirement.

Taiwan is a good example country that has both shrinking family support mechanism and unevenly implemented social security system. Taiwan used to be an agricultural society. Intra-family transfer from children to parents at that time served as the major insurance against inadequacy of retirement income. It then smoothly transformed into a newly industrialized Asian tiger. Urbanization and weakening confusion filial piety have placed this traditional mechanism under increasing pressure. Moreover, the inability of Taiwanese young generations to financially support their parents has increased due to downturn economic conditions. Another problem the aging Taiwan has experienced is the uneven implementation of social security. Unlike the full coverage in most of developed countries, Taiwan's social security system has not been evenly implemented. A significant proportion of Taiwanese people are not covered by social insurances⁴. In face of failing family support mechanism and incomplete social security, therefore, Taiwanese have increased the awareness of the need to strengthen own financial preparedness in order to secure retirement life. Although some people may still assume that their retirement life can rely upon their children or social security, but more and more people believe that own financial preparedness will become an increasingly important way to secure the financial needs in retirement life. They would work more, save more, invest more, and buy more private insurance when they were young and working.

Who would be more likely to plan for their retirement's financial needs? What are determinant factors that underlie individuals' financial preparedness for retirement? It is widely believed that the perceived adequacy of retirement income negatively influences preretirement preparation tendencies. Malroux and Xiao (1995) find that younger respondents, white, females, and self-employed are less likely to perceive their future retirement income to be adequate than otherwise similar households. Hershey and Mowen (2000) revealed that both personality constructs and financial knowledge were significant predictors of pre-retirement planning. Based on previous studies, several demographic variables including gender (Anderson et al., 2000; Morgan and Eckert, 2004), age (Newman, Sherman and Higgins, 1982; Anderson et al., 2000; Morgan and Eckert, 2004), marital status (Morgan and Eckert, 2004), race (Kilty and Behling, 1986; Richardson and Kilty, 1989), education (Beck, 1984; Morgan and Eckert, 2004), income (Turner, Bailey, and Scott, 1994; Morgan and Eckert, 2004), and good health (DeVaney, 1995; Morgan and Eckert, 2004) are expected to

⁴ Only 60% of employees are currently covered by occupational pensions. A national pension plan aiming to cover another 40% of population has been approved by Legislature Yuan and will be effective on October, 2008.

be closely associated with financial preparation for retirement. Using a recent survey conducted by Aging Research Group of Taiwan's National Science Council, we employ the logit analysis to examine determinant factors influencing pre-retirees' tendencies of financial preparedness in Taiwan. These determinant variables include demographic variables, satisfaction of current economic and health conditions, and so on.

Another related research question in this study is: what is the subjectively best way to assure financial security in retirement? If individuals subjectively think own preparedness is the best way to secure financial needs in retirement, we would believe that they would be more likely to plan for their retirement while young. In contrast, individuals may not plan for retirement's financial needs if they think other alternatives such as family support and social security are the best ways. Therefore, tendencies to preparedness and subjective preferences toward the alternative of own preparedness are closely related. In addition to studying whether individuals have begun to plan for retirement, we would also study factors that underlie individuals' subjective preferences toward alternative ways of securing the financial needs in retirement. Using the same survey, we employ a discrete choice model to explore factors that underlie individuals' subjective valuations on three alternative ways of assuring financial security in retirement: intra-family support, own preparedness and social security. Explanatory variables included in the discrete choice model are the same as those in previous logit analysis of retirement preparation.

The rest of the paper will be laid out as follows. Section two presents methodology comprising of specification, data and sample, variables. Section three displays descriptive statistics and empirical results. The last section concludes.

2. Methodology

2.1. Econometric Model

Discrete choice models are now used in a wide variety of situations in applied econometrics. By far the model specification which is used most often is the multinomial logit model (McFadden, 1973). By following Hausman and McFadden (1984), the functional form for discrete probabilities in multinomial logit model can be expressed as follows,

$$P(i | z, C, \beta) = e^{z_i \beta} / \sum_{j \in C} e^{z_j \beta}, \quad (1)$$

Where $C = \{1, 2, \dots, J\}$ is a finite choice set; i, j are alternatives in the choice set; z is a vector of explanatory variables describing the attributes of alternative /or the characteristics of decision maker. $P(i | z, C, \beta)$ is the probability that a randomly selected decision maker, when faced with choice set C with attributes z , will choose i . A binary logit analysis is the case in which there are only two alternatives in the choice set.

2.2. Specification

Binary Logit Analysis of Financial Preparedness

In the specification of financial preparedness, the choice set includes two alternatives: preparedness and non-preparedness. The dependent variable is the probability of an individual making a retirement preparation. Explanatory variables include basic demographic variables (e.g., gender, age, marital status, race, education, and income), cash assistance from others, satisfaction level on current economic conditions, subjective health status, and the responsibility of care for parent.

Multinomial Logit Analysis of Alternatives for Financial Security

Unlike the above specification, the choice set now includes three alternatives: family support, own preparedness, and social security. The alternative “social security” serves as the base. Explanatory variables included in this specification are the same as those in the above specification.

2.3. Data and Sample

We adopt a survey data conducted in 2007 by Aging Society Research Team of National Science Council. The survey includes the following parts: personal information, housing, employment and retirement, volunteer, health care, informal social support, social participation, transportation, economic security. The survey includes 1143 samples between 46 and 64 years (working sample) and 1308 samples older than 65 years (retiree sample). In the logit analysis of retirement preparation, we only use the working sample. In contrast, we use the full sample including both

working and retiree samples in the discrete choice analysis of alternative ways of securing retirement financial needs. Due to incomplete information on several important variables, we delete some of samples with missing data. Therefore, we only have 685 observations in the analysis of retirement preparation, and 1176 observations in the analysis of alternative ways of securing retirement financial needs.

2.4. Definitions of Variables

A. Dependent Variable

In the specification of financial preparation, the dependent variable is the dummy of preparedness. The specification of this dummy variable is based on the answer for the survey question: whether you have begun to prepare financially for your future retirement? The dummy equals one if the individual answers that he has begun to plan for the future retirement, and zero otherwise. Moreover, the dependent variables are three dummies in the specification of alternatives for financial security. These dummies are family support, own preparedness, and social security. The survey asks what you think is the best way to assure the financial security in retirement. There are following options: relying on children, working more while younger, saving more while younger, investing more while younger, purchasing private insurance, employer-sponsored pension, government-sponsored annuity, government assistance, and social assistance from charity. We define family support dummy equals one if the individual chooses relying on children. Moreover, we define the dummy of own preparedness equals one if the individual chooses one of the following options: working more while younger, saving more while younger, investing more while younger, and purchasing private insurance. Lastly, the dummy of social security equals one if the individual chooses one of options such as: employer-sponsored pension, government-run annuity, government assistance, and social assistance from charity.

B. Explanatory Variables

We include demographic variables as primary explanatory variables. Besides basic variables such as male dummy, age, marital status, mainlander⁵ dummy, we also include dummies for three age cohorts (middle-age cohort of 46-55 years, pre-retiree cohort of 56-64 years, and retiree cohort of 65 years above), dummies for four education categories (primary education, junior high, senior high, and college above),

⁵ Mainlanders are those who came from China to Taiwan after 1949.

and four types of incomes (wage income, social insurance income, return income⁶, private insurance income). Moreover, we define the dummy of cash assistance equals one if the individual usually receives cash assistance from others to support daily expenses. The survey asks a question: who should be responsible for taking care of parents? We define the dummy of own responsibility equals one if the answer is “parent themselves”. In addition, we include both satisfaction of economic conditions (the dummy equals 1 if satisfactory) and subjective health status (the dummy equals 1 if healthy) in the estimation.

3. Empirical Study

3.1. Descriptive Statistics

A. Working sample for logit analysis

Table 1 summarizes the statistics of the working sample with 685 observations. We find 52% of them have begun to prepare financially for their retirements. 64% of them are classified as middle aged workers, whereas 36% are called pre-retirees. Two genders share equally in the sample. The average age of the sample is 53.89 years old. Most of them are married. People who have lower than college education take up about 2/3 of the sample. Only few percentage of working sample has begun to receive insurance incomes. Most of them have wage incomes, while only a quarter has return incomes. One third of them are regularly assisted by others on daily expenses. 65% of them are satisfied with their current economic conditions. Majority of them feel they are healthy. Only less than 20% of them think parents should take care of themselves.

B. Full sample for multinomial logit analysis

Table 2 indicates that 68.2% of full samples consider own preparedness as the best way to guarantee financial security in retirement, while 11.9% consider family support and 19.9% consider social security as their best ways. Our full samples are on average 62 years old; 34.5% of them are at middle age cohort, 20.9% of them are at pre-retirement age cohort, and 40.4% are at retirement age cohort. In addition, 54% of our samples are male; almost 70% of them still have spouses or partners; 15.8% of them consider themselves mainlanders. Moreover, almost half of the samples have primary education or below, while only about 20% of the samples have college or

⁶ It includes rent, interest, dividend, capital gain incomes.

above degrees. Furthermore, we find 43% of the samples receive wage income, 14% receive social insurance income, 22% receive return income, and 5% receive private insurance income, respectively. Regarding the source of daily expenses, our statistics show that 44% of the samples regularly receive cash assistances on their expenses. Surprisingly, only 22% of the samples think parents have to take the own responsibility of watching themselves. We find majority are satisfied on their current economic conditions and health conditions.

3.2. Estimation Results

A. Logit analysis results

As shown in Table 3, male is less likely to prepare financially for their retirement than female. This is different from findings of previous literatures. Likewise, people with lesser educations (primary and secondary) have lower probabilities of own preparedness. In contrast, people with various incomes such as wage, capital return, and private insurance significantly increase the probability of preparing for their financial futures. Furthermore, individuals satisfied with current economic conditions are more likely to prepare for retirement. The signs of other variables are mostly consistent to what we expected. However, they are not statistically significant.

B. Multinomial analysis results

According to estimation results in Table 4, we find most of coefficients have the same signs as expected, but many of them are not statistically significant. One possible reason for this insignificance outcome is that there are two relatively small cells (alternatives of family support and social security) in the discrete choice model. Our estimates suggest that retirees are less likely to consider own preparedness is the best way to secure financial needs in retirement. Moreover, individuals with only primary education are more likely to consider the intra-family support, but not own preparedness, as the best way. Furthermore, individuals who have return incomes including rent, interest, dividend, and capital gains are more likely to choose own preparedness as their best ways. They tend not to rely on family support and social security. Not surprisingly, if individuals are currently assisted on their regular expenses, then they are more likely to choose family support as their best ways to secure retirement's financial needs. Our results also suggest that individuals who are satisfied on their current economic and health conditions are more likely to consider own preparedness as their best ways.

4. Conclusion

There exist three major alternative ways to secure the financial needs in retirement: family support, social security, and own preparedness. Individuals will have to rely upon own preparedness in face of possible failures of family support mechanism and social security systems. Taiwan is a country that has both shrinking family support mechanism and unevenly implemented social security system. The first contribution of the paper is to explore factors influencing Taiwanese individual's financial preparedness for retirement. Our findings suggest people who are male, less educated, with least incomes and unsatisfactory economic conditions are less likely to prepare financially for retirement. Our second contribution is to examine influential factors that underlie an individual's subjective preferences on alternative ways of assuring the financial security in retirement. We find that individuals, who have nonwage incomes and who are satisfied with their economic and health conditions, are more likely to consider the own preparedness as their best ways to maintain the financial security in retirement. In contrast, current retirees are less likely to consider own past preparedness as their best ways. Moreover, individuals who are less educated or are constantly assisted on regular expenses are more likely to consider family support as their best ways to secure financial needs in retirement.

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Table 1. Summary Statistics of Working Sample

Variables	Mean	Standard Deviation
Preparedness	0.518	
Male	0.508	0.500
Age	53.89	4.685
Middle-age cohort	0.641	0.48
Pre-retiree cohort	0.359	0.48
Marital status	0.866	0.341
Mainlander	0.102	0.303
Primary Education	0.292	0.455
Junior High	0.176	0.381
Senior High	0.287	0.452
College above		
Wage income	0.633	0.482
Social Insurance income	0.074	0.262
Return income	0.255	0.436
Private Insurance income	0.074	0.262
Cash assistance	0.331	0.471
Satisfaction	0.651	0.476
Health status	0.864	0.343
Own responsibility	0.185	0.388
Sample size	685	

Table 2: Summary Statistics of Full Sample

Variables	Mean	Standard Deviation
Family support	0.119	
Own preparedness	0.682	
Social Security	0.199	
Male	0.549	0.497
Age	62.55	11.57
Middle-age cohort	0.345	0.475
Pre-retiree cohort	0.209	0.406
Retiree cohort	0.404	0.491
Marital status	0.696	0.459
Mainlander	0.158	0.365
Primary Education	0.44	0.496
Junior High	0.141	0.348
Senior High	0.218	0.413
College above	0.199	0.400
Wage income	0.433	0.495
Social Insurance income	0.138	0.345
Return income	0.218	0.413
Private Insurance income	0.049	0.216
Cash assistance	0.442	0.496
Satisfaction	0.636	0.481
Health status	0.792	0.405
Own responsibility	0.22	0.414
Sample size	1176	

Table 3. Logit Analysis Results
 Dependent variable: Probability of own preparedness

Variables	Coefficient	Marginal Effect
Constant	-2.3441(-2.00)**	
Male	-0.2833(-2.29)**	-0.1123(-2.30)**
Age	0.0356(1.59)	0.0142(1.59)
Pre-retiree cohort	-0.2406(-1.13)	-0.0957(-1.13)
Marital status	0.1528(0.96)	0.0609(0.96)
Mainlander	-0.1283(-0.68)	-0.0517(-0.68)
Prime Education	-0.7695(-4.39)***	-0.2984(-4.67)***
Junior High	-0.6352(-3.51)***	-0.2469(-3.73)***
Senior High	-0.2596(-1.64)	-0.1032(-1.64)
Wage Income	0.2741(1.95)*	0.1089(1.96)**
Social Insurance income	0.1949(0.81)	0.0767(0.82)
Return income	0.5551(4.02)***	0.2142(4.24)***
Private Insurance income	0.5949(2.61)**	0.2224(2.92)**
Cash assistance	-0.2105(-1.44)	-0.0838(-1.44)
Satisfaction	0.7301(6.36)***	0.2846(6.69)***
Health status	0.2685(1.67)	0.1067(1.69)
Own responsibility	0.0024(0.02)	0.0009(0.02)
Sample size	685	

Table 4. Multinomial Logit Estimation Results

Alternative 1: Family Support

Variables	Coefficient	Marginal Effect
Constant	-4.018(-2.91)**	
Male	0.040(0.16)	0.0044(0.27)
Age	0.043(1.85)*	0.0018(1.22)
Pre-retiree cohort	-0.065(-0.17)	0.0043(0.17)
Retiree cohort	-0.650(-1.12)	0.0047(0.12)
Marital status	-0.169(-0.67)	0.0045(0.28)
Mainlander	-0.479(-1.10)	-0.0323(0.28)
Prime Education	0.591(1.26)	0.0782(2.19)**
Junior High	0.305(0.59)	0.0378(0.84)
Senior High	-0.625(-1.16)	-0.0282(-0.90)
Wage Income	-0.158(-0.52)	-0.0007(-0.03)
Social Insurance income	-0.508(-1.19)	-0.0227(-0.94)
Return income	-0.301(-0.72)	-0.0534(-2.83)**
Private Insurance income	-0.293(-0.35)	-0.0325(-0.83)
Cash assistance	0.598(2.14)**	0.0637(3.04)**
Satisfaction	0.701(2.99)**	0.0146(0.97)
Health status	0.374(1.47)	-0.0111(-0.60)
Own responsibility	-0.156(-0.56)	-0.0252(-1.59)
Sample size	140	

Alternative 2: Own Preparedness

Variables	Coefficient	Marginal Effect
Constant	-0.275(-0.27)	
Male	-0.021(-0.12)	-0.0065(-0.22)
Age	0.025(1.37)	0.0023(0.76)
Pre-retiree cohort	-0.154(-0.58)	-0.0274(-0.58)
Retiree cohort	-0.921(-2.08)**	-0.1499(-1.89)*
Marital status	-0.287(-1.60)	-0.0456(-1.56)
Mainlander	-0.002(-0.01)	0.02527(0.56)
Prime Education	-0.459(-1.63)	-0.1311(-2.59)**
Junior High	-0.160(-0.52)	-0.05426(-0.92)
Senior High	-0.287(-1.05)	-0.02384(-0.47)
Wage Income	-0.190(-0.90)	-0.02845(-0.77)
Social Insurance income	-0.237(-0.88)	-0.02037(-0.41)
Return income	0.654(2.72)**	0.13333(4.01)***
Private Insurance income	0.267(0.62)	0.0645(0.97)
Cash assistance	-0.238(-1.26)	-0.0863(-2.55)**
Satisfaction	0.654(3.95)***	0.0929(3.07)**
Health status	0.682(3.70)***	0.1229(3.33)***
Own responsibility	0.248(1.29)	0.05654(1.83)*
Sample size	802	

Alternative 3: Social Security

Variables	Coefficient	Marginal Effect
Constant		
Male		0.0022(0.08)
Age		-0.00416(-1.51)
Pre-retiree cohort		0.02303(0.54)
Retiree cohort		0.14529(1.98)**
Marital status		0.04109(1.62)
Mainlander		0.00705(0.17)
Prime Education		0.05284(1.20)
Junior High		0.01640(0.33)
Senior High		0.05213(1.12)
Wage Income		0.02913(0.90)
Social Insurance income		0.04311(0.94)
Return income		-0.07986(-2.70)**
Private Insurance income		-0.03195(-0.55)
Cash assistance		0.0225(0.78)
Satisfaction		-0.10757(-3.92)***
Health status		-0.11178(-3.30)***
Own responsibility		-0.03126(-1.15)
Sample size	234	